

The following is a tentative schedule of our lectures this semester, along with the associated textbook readings. All readings up to Midterm 3 are from Donaldson and Pantano—except for those marked NT and ST, which refer to my supplemental notes on number theory and set theory respectively.

	Date	Readings	Topics
M	8/25	§1	Introduction
W	8/27	§2.1-2.2	Propositions, methods of proof
F	8/29	§2.2	Methods of proof
W	9/3	§2.2	Methods of proof
F	9/5	§2.3	Quantifiers
M	9/8	§2.3-3.1	Quantifiers, divisibility and remainders
W	9/10	§3.1	Congruence, modular arithmetic
F	9/12	§3.2	GCDs, the Euclidean algorithm
M	9/15	§3.2-4.1	Bézout's identity, set notation and describing a set
W	9/17	§4.2-4.3	Subsets, unions, intersections, complements
F	9/19	§4.4	Functions
M	9/22	§4.4	Injectivity and surjectivity, inverse functions
W	9/24	§4.4, NT	Injectivity and surjectivity, multiplicative inverses modulo n
F	9/26	-	Midterm 1
M	9/29	NT	Euclid's lemma and applications
W	10/1	NT	Fermat's little theorem; prime factorization
F	10/3	§5.1-5.2	Proof by induction
M	10/6	§5.3	Well-ordering and the principle of induction
W	10/8	§5.4	Well-ordering, strong induction
F	10/10	§6.1-6.2	Cartesian products, power sets
M	10/13	§6.2-6.3	Power sets, indexed collections of sets
W	10/15	§6.3-7.1	Indexed collections of sets, relations
F	10/17	-	Midterm 2
M	10/20	§7.2-7.3	Functions as relations, equivalence relations
W	10/22	§7.3-7.4	Equivalence relations, partitions
F	10/24	§7.4-7.6	Partitions, well-definition on equivalence classes
M	10/27	ST	Order relations, Zorn's lemma, Zorn \implies axiom of choice
W	10/29	ST, §8.1	Sketch of Zorn \implies well-ordering theorem; infinite cardinalities
F	10/31	§8.1	Countable sets, countability of \mathbb{Z} and \mathbb{Q}
M	11/3	§8.1-8.2	More countable sets, uncountability of \mathbb{R}
W	11/5	§8.2	Cardinality of power sets
F	11/7	§8.2	Cantor-Schröder-Bernstein theorem and applications
M	11/10	§8.2	More on infinite cardinalities
W	11/12	-	Midterm 3

The readings for the remainder of the class are from Lebl.

Date	Readings	Topics
F 11/14	§1.1-1.2.1	\mathbb{R} and the least upper bound property
M 11/17	§1.2.2-1.2.3	The Archimedean property and related facts
W 11/19	§1.2.3-1.3	Properties of sup and inf, absolute value and bounded functions
F 11/21	§2.1	Sequences, limits, and basic properties of convergent sequences
11/24-28	-	No class (fall break)
M 12/1	§2.1.1-2.1.3	Monotone sequences, tails, and subsequences
W 12/3	§2.2.1-2.2.2	Limits and inequalities, continuity of algebraic operations
F 12/5	§2.2.2-2.3.2	Continuity of algebraic operations. \limsup and \liminf
M 12/8	§2.3.3-2.4	Bolzano-Weierstrass, Cauchy sequences
W 12/10	§2.4	Cauchy completeness
Tu 12/16	-	Final exam (Tuesday 1:30-4:30pm, in our usual classroom)

We will skip the following sections and subsections of Lebl: 1.4, 1.5, 2.2.3, 2.2.4, 2.3.4.